

Rare Occurrence of Prostate Cancer Metastasizing to the Orbit: A Case Report

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INTRODUCTION

Prostate cancer is the second most common cancer among men.¹ The metastasis from prostate cancer occurs most frequently to bone.²

The metastasis to orbit from carcinoma prostate is rarely reported in the medical literature.³ We present a case of 74 years old male with prostate cancer. He was on Abiraterone therapy and presented with orbital metastasis two years following the initial diagnosis. He was evaluated with CT scan and treated with radiotherapy.

CASE REPORT

A 74 years old gentleman presented to us with lower urinary tract symptoms, who had undergone Trans Urethral Resection of Prostrate (TURP) elsewhere years back and histopathology reported as benign prostatic hyperplasia. The clinical examination revealed hard nodular prostate with serum total PSA of 22 ng / dl. We performed Trans Rectal Ultrasound (TRUS) guided prostatic biopsy which reported adenocarcinoma prostate

Abstract

Prostate cancer is second most common cancer with frequent metastasis occurring to bone. We report a unique case of soft tissue and bony orbital metastasis from carcinoma prostate. The patient presented with orbital metastasis after defaulting to the advised treatment. He responded well to radiation therapy and the lesion regressed completely. Our patient was diagnosed to have an oligo-metastatic carcinoma of the prostate. He was non-compliant with treatment and presented to us with proptosis, which was later diagnosed to be an orbital metastasis from prostate cancer. It responded well to the external beam chemotherapy. Orbital metastasis is a rare but known complication of carcinoma prostate. One must consider the diagnosis of orbital metastasis from carcinoma prostate in an elderly male presenting with proptosis.

with Gleason score of 7 (3 + 4). The bone scan reported axial skeletal metastases with no visceral metastases. He was started on docetaxel chemotherapy and Androgen Deprivation Therapy (ADT).

After two cycles of chemotherapy, he was switched to Abiraterone therapy, as he could not tolerate chemotherapy. Post Abiraterone therapy, his serum PSA was 3.1 ng / dl with serum testosterone under castrate level at three months follow up. However, he was lost to follow up for two years and he presented suddenly with left orbital swelling and excess lacrimation (Figure 1). He had reduced the dosage of Abiraterone by himself and was non-compliant.

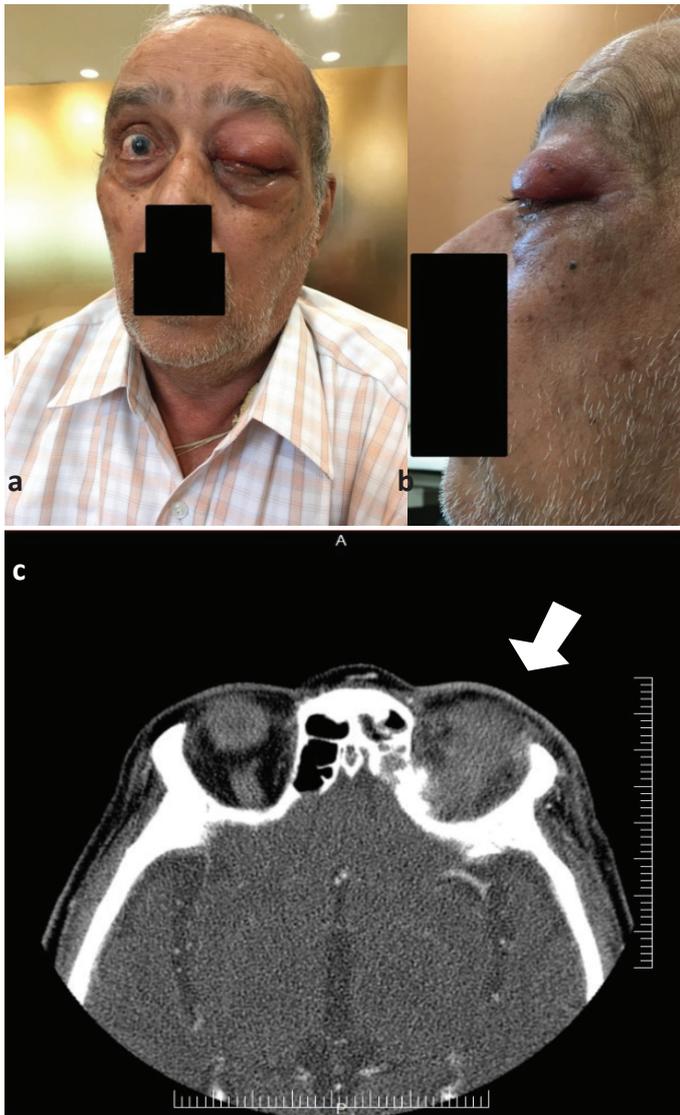


Figure 1: Clinical photographs depicting the proptosis (Figure a - anterior view and figure b - lateral view); axial section of CT brain depicting the soft tissue and lytic bony lesion in the left orbit (Figure c - white arrow).

His serum PSA at that point was 22.4 ng/dl with castration levels of serum testosterone. The CT orbit revealed soft tissue space occupying lesion in the left orbit with no bony destruction diagnosed to be metastasis from carcinoma prostate. He was referred to Radiation Oncologist for further management. He received palliative RT to orbit (30 Gy in 10 fractions) following which lesion regressed completely.

DISCUSSION

The most common primary malignancy in the orbit is choroidal melanoma and the most common secondary malignancy in the orbit is metastasis from breast cancer.⁴ On the other hand, the most common sites of metastasis

of prostate cancer are bone (84%), distant lymph nodes (10.6%), liver (10.2%) and thorax (9.1%).⁵⁻⁷ The pelvis and spine are frequent localizations for bone metastases, but orbital and calvarial spread is extremely rare.³ A review of the literature revealed that metastasis from prostate cancer accounts for about 3.6 to 4% of all cases of orbital secondaries.⁸ Two third of these patients were diagnosed cases of prostate cancer, while one-third of them were diagnosed based on orbital metastasis, trauma, elevated intracranial pressure, brainstem lesions, and vasculopathies.⁹ Here, we describe a rare cause of sixth cranial nerve palsy.

The prostate carcinoma metastasis is considered to spread in the brain, calvarium and orbit by two pathways.¹⁰ First, it spreads directly through paravertebral Batson's venous plexus. Second, it spreads initially to the areas such as lung and bone where prostate cancer frequently metastasizes and then it spreads by secondary seeding.

Majority of reported cases had primary ocular presentation (50%), compared to patients presenting with ocular symptoms later to a primarily diagnosed carcinoma prostate (27%). We also found that left orbit was more commonly involved (48%) than right orbit (33%). Bilateral orbital involvement was seen in 4% cases, in remaining cases we could not find the laterality of involvement in the available literature. In about 39.5% of cases, there was at least one extra orbital skeletal metastasis documented; most common one being axial skeleton specifically spinal metastasis. We could not assert the importance of serum PSA value, Gleason's score of the tumour as they were not well documented in the available literature and due to the fact that significant number of cases belonged to pre-PSA era. We found that 62.5% patients received hormone based treatments. Few patients received radiation therapy, surgery and multimodal therapy. The majority of patient's ocular symptoms responded to the treatment given, but the survival was poor (< 12 months in majority of the cases).

In our case, the patient had already been found to have other skeletal metastasis at initial diagnosis. He was intolerant to chemotherapy hence was initiated on treatment with Abiraterone. Initially, it brought down the PSA level. Later on, he was lost to follow-up and lost compliance to the treatment. Poor compliance to advised treatment resulted in progression of disease and elevated serum PSA during follow-up. Prompt diagnosis and early referral to radiotherapy resulted in complete resolution.

CONCLUSIONS

Though the orbital metastasis from prostate cancer is rare, a possibility of the same need to be kept in mind in the evaluation orbital swelling in elderly males and also in carcinoma prostate cases with biochemical recurrence.

REFERENCES

1. Worldwide cancer data. World Cancer Research Fund. Available at: <https://www.wcrf.org/dietandcancer/cancer-trends/worldwide-cancer-data>
2. Patrikidou A, Loriot Y, Eymard JC. Who dies from prostate cancer? *Prostate Cancer Prostatic Dis.* 2014;17:348–52. DOI: 10.1038/pcan.2014.35.
3. Valenzuela AA, Archibald CW, Fleming B. Orbital metastasis: clinical features, management and outcome. *Orbit Amst Neth.* 2009;28:153–9. DOI: 10.1080/01676830902897470.
4. Tailor TD, Gupta D, Dalley RW, Keene CD, Anzai Y. Orbital Neoplasms in Adults: Clinical, Radiologic, and Pathologic Review. *Radio Graphics.* 2013;33:1739–58. DOI: 10.1148/rg.336135502.
5. Gandaglia G, Abdollah F, Schiffmann J. Distribution of metastatic sites in patients with prostate cancer: A population-based analysis. *The Prostate.* 2014;74:210–6. DOI: 10.1002/pros.22742.
6. Disibio G, French SW. Metastatic patterns of cancers: results from a large autopsy study. *Arch Pathol Lab Med.* 2008;132:931–9. DOI:10.1043/1543-2165(2008)132[931:MPOCRF]2.0.CO;2.
7. Szot W, Kostkiewicz M, Zając J, Owoc A, Bojar I. Prostate cancer in patients from rural and suburban areas--PSA value, Gleason score and presence of metastases in bone scan. *Ann Agric Environ Med AAEM.* 2014;21:888–92. DOI: 10.5604/12321966.1129953.
8. Saadi A, Kerkeni W, Bouzouita A. Bilateral Orbital Metastasis of Prostatic Adenocarcinoma. *Urology.* 2016;94:e3–4. DOI: 10.1016/j.urology.2016.05.005.
9. Özbek Z, Özkara E, Arik D, Ant MA. Calvarial-orbital Metastasis of Prostate Carcinoma which was Diagnosed with Sixth Cranial Nerve Palsy. *Asian J Neurosurg.* 2017;12:769–71. DOI: 10.4103/1793-5482.180933.
10. Ransom DT, Dinapoli RP, Richardson RL. Cranial nerve lesions due to base of the skull metastases in prostate carcinoma. *Cancer.* 1990;65:586–9. DOI: 10.1002/1097-0142(19900201)65:3<586::AID-CNCR2820650333>3.0.CO;2-P.